

ANALYTICAL REPORT

CHECKED FOR COMPLETENESS
OF PARAMETERS ORDERED BY:

Lammie
10/10/10

Job Number: 360-29919-1

Job Description: Olin Chemical Quarterly Surfacewater

For:
Olin Corporation
3855 North Ocoee Street
Suite 200
Cleveland, TN 37312-4441

Attention: Mr. Steven Morrow

Joseph A. Chimi

Approved for release.
Joe Chimi
Report Production Representative
9/16/10 4:41 PM

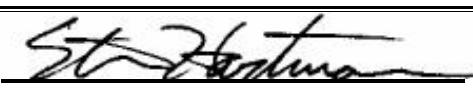
Designee for
Becky C Mason
Project Manager II
becky.mason@testamericainc.com
09/16/2010

Results relate only to the items tested and the sample(s) as received by the laboratory. The test results in this report meet all NELAC requirements for accredited parameters, exceptions are noted in this report. Pursuant to NELAC, this report may not be reproduced except in full, and with written approval from the laboratory. TestAmerica Westfield Certifications and Approvals: MADEP MA014, RIDOH57, CTDPH 0494, VT DECWSD, NH DES 2539, NELAP FL E87912 TOX, NELAP NJ MA008 TOX, NELAP NY 10843, NY ELAP 10843, North Carolina 647, NELAP PA 68-04386. Field sampling is performed under SOPs WE-FLD-001 and WE-FLD-002.

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MassDEP Analytical Protocol Certification Form

Laboratory Name:	TestAmerica Westfield		Project #:	360-29919-1	
Project Location:	RTN:				
This form provides certifications for the following data set: list Laboratory Sample ID Number(s): 360-29919-(1-6)					
Matrices:	<input checked="" type="checkbox"/> Groundwater/Surface Water <input type="checkbox"/> Soil/Sediment <input type="checkbox"/> Drinking Water <input type="checkbox"/> Air <input type="checkbox"/> other:				
CAM Protocols (check all that apply below):					
8260 VOC CAM II A <input type="checkbox"/>	7470/7471 Hg CAM III B <input type="checkbox"/>	Mass DEP VPH CAM IV A <input type="checkbox"/>	8081 Pesticides CAM V B <input type="checkbox"/>	7196 Hex Cr CAM VI B <input type="checkbox"/>	Mass DEP APH CAM IX A <input type="checkbox"/>
8270 SVOC CAM II B <input type="checkbox"/>	7010 Metals CAM III C <input type="checkbox"/>	Mass DEP EPH CAM IV B <input type="checkbox"/>	8151 Herbicides CAM V C <input type="checkbox"/>	8330 Explosives CAM VIII A <input type="checkbox"/>	TO-15 VOC CAM IX B <input type="checkbox"/>
6010 Metals CAM III A <input checked="" type="checkbox"/>	6020 Metals CAM III D <input type="checkbox"/>	8082 PCB CAM V A <input type="checkbox"/>	9014 Total Cyanide/PAC CAM VI A <input type="checkbox"/>	332.0 Perchlorate CAM VIII B <input type="checkbox"/>	
Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status					
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding time.				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
E	a. VPH, EPH and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Responses to Questions G, H and I below are required for "Presumptive Certainty" status					
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
<i>Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WCS-07-350</i>					
H	Were all QC performance standards specified in the CAM protocol(s) achieved?				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s) ?				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
¹ All negative responses must be addressed in an attached laboratory narrative.					
<i>I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, is accurate and complete.</i>					
Signature:			Position:	Laboratory Director	
Printed Name:	Steven C. Hartmann		Date:	9/16/10 16:34	

CASE NARRATIVE

Client: Olin Corporation

Project: Olin Chemical Quarterly Surfacewater

Report Number: 360-29919-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 09/01/2010; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.0 C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2 C of the required temperature or method specified range. For samples with a specified temperature of 4 C, samples with a temperature ranging from just above freezing temperature of water to 6 C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

TOTAL METALS (ICP)

Samples OC-PZ 18 R SW (360-29919-1), OC-ISCO 1 (360-29919-2), OC-ISCO 2 (360-29919-3), OC-ISCO 3 (360-29919-4), OC-PZ 16 RR SW (360-29919-5) and OC-PZ 17 RR SW (360-29919-6) were analyzed for total metals (ICP) in accordance with EPA SW-846 Method 6010B. The samples were prepared on 09/02/2010 and analyzed on 09/03/2010.

Chromium was detected in method blank MB 360-62734/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged. Refer to the QC report for details.

At the request of the client, an abbreviated/modified MCP analyte list was reported for this job.

No other difficulties were encountered during the metals analyses.

All other quality control parameters were within the acceptance limits.

DISSOLVED METALS

Samples OC-PZ 18 R SW (360-29919-1), OC-ISCO 1 (360-29919-2), OC-ISCO 2 (360-29919-3), OC-ISCO 3 (360-29919-4), OC-PZ 16 RR SW (360-29919-5) and OC-PZ 17 RR SW (360-29919-6) were analyzed for dissolved metals in accordance with EPA SW-846 Method 6010B. The samples were analyzed on 09/07/2010 and 09/08/2010.

At the request of the client, an abbreviated/modified MCP analyte list was reported for this job.

No difficulties were encountered during the dissolved metals analyses.

All quality control parameters were within the acceptance limits.

ANIONS

Samples OC-PZ 18 R SW (360-29919-1), OC-ISCO 1 (360-29919-2), OC-ISCO 2 (360-29919-3), OC-ISCO 3 (360-29919-4), OC-PZ 16 RR SW (360-29919-5) and OC-PZ 17 RR SW (360-29919-6) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 09/03/2010.

Due to a sample management error, sample OC-PZ 17 RR SW (360-29919-6) was analyzed outside of holding time for Nitrate.

Samples OC-PZ 18 R SW (360-29919-1)[10X], OC-ISCO 1 (360-29919-2)[10X], OC-ISCO 2 (360-29919-3)[10X], OC-ISCO 3 (360-29919-4)[10X], OC-PZ 16 RR SW (360-29919-5)[10X] and OC-PZ 17 RR SW (360-29919-6)[10X] required dilution prior to analysis

due to high target concentration. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the anions analyses.

All quality control parameters were within the acceptance limits.

AMMONIA

Samples OC-PZ 18 R SW (360-29919-1), OC-ISCO 1 (360-29919-2), OC-ISCO 2 (360-29919-3), OC-ISCO 3 (360-29919-4), OC-PZ 16 RR SW (360-29919-5) and OC-PZ 17 RR SW (360-29919-6) were analyzed for ammonia in accordance with Lachat 107-06-1B. The samples were prepared on 09/03/2010 and analyzed on 09/03/2010 and 09/09/2010.

Samples OC-PZ 18 R SW (360-29919-1)[10X], OC-ISCO 2 (360-29919-3)[10X] and OC-PZ 17 RR SW (360-29919-6)[5X] required dilution prior to analysis due to high concentration. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the ammonia analyses.

All quality control parameters were within the acceptance limits.

SPECIFIC CONDUCTIVITY

Samples OC-PZ 18 R SW (360-29919-1), OC-ISCO 1 (360-29919-2), OC-ISCO 2 (360-29919-3), OC-ISCO 3 (360-29919-4), OC-PZ 16 RR SW (360-29919-5) and OC-PZ 17 RR SW (360-29919-6) were analyzed for specific conductivity in accordance with SM20 2510B. The samples were analyzed on 09/08/2010.

Sample OC-ISCO 2 (360-29919-3)[2X] required dilution prior to analysis due to high concentration. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the conductivity analyses.

All quality control parameters were within the acceptance limits.

NITRITE

Samples OC-PZ 18 R SW (360-29919-1), OC-ISCO 1 (360-29919-2), OC-ISCO 2 (360-29919-3), OC-ISCO 3 (360-29919-4), OC-PZ 16 RR SW (360-29919-5) and OC-PZ 17 RR SW (360-29919-6) were analyzed for Nitrogen-Nitrite in accordance with SM20 4500 NO₂ B. The samples were analyzed on 09/01/2010.

No difficulties were encountered during the nitrite analyses.

All quality control parameters were within the acceptance limits.

EXECUTIVE SUMMARY - Detections

Client: Olin Corporation

Job Number: 360-29919-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
360-29919-1 OC-PZ 18 R SW					
Aluminum	1000		100	ug/L	6010B
Chromium	18	B	5.0	ug/L	6010B
Sodium	55000		2000	ug/L	6010B
Sulfate	200		20	mg/L	300.0
Chloride	64		10	mg/L	300.0
Nitrate as N	0.22		0.050	mg/L	300.0
Ammonia	21		1.0	mg/L	L107-06-1B
Specific Conductance	660		1.0	umhos/cm	SM 2510B
<i>Dissolved</i>					
Aluminum	1100		100	ug/L	6010B
Chromium	12		5.0	ug/L	6010B
Sodium	61000		2000	ug/L	6010B
360-29919-2 OC-ISCO 1					
Aluminum	950		100	ug/L	6010B
Chromium	15	B	5.0	ug/L	6010B
Sodium	47000		2000	ug/L	6010B
Sulfate	180		20	mg/L	300.0
Chloride	60		10	mg/L	300.0
Nitrate as N	0.29		0.050	mg/L	300.0
Ammonia	19		0.10	mg/L	L107-06-1B
Specific Conductance	620		1.0	umhos/cm	SM 2510B
<i>Dissolved</i>					
Aluminum	1100		100	ug/L	6010B
Chromium	10		5.0	ug/L	6010B
Sodium	55000		2000	ug/L	6010B
360-29919-3 OC-ISCO 2					
Aluminum	360		100	ug/L	6010B
Chromium	65	B	5.0	ug/L	6010B
Sodium	140000		2000	ug/L	6010B
Sulfate	480		20	mg/L	300.0
Chloride	170		10	mg/L	300.0
Nitrate as N	3.1		0.050	mg/L	300.0
Ammonia	63		1.0	mg/L	L107-06-1B
Specific Conductance	1600		2.0	umhos/cm	SM 2510B
<i>Dissolved</i>					
Aluminum	56	J	100	ug/L	6010B
Chromium	13		5.0	ug/L	6010B
Sodium	150000		2000	ug/L	6010B

EXECUTIVE SUMMARY - Detections

Client: Olin Corporation

Job Number: 360-29919-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
360-29919-4	OC-ISCO 3				
Aluminum	35	J	100	ug/L	6010B
Chromium	1.8	J B	5.0	ug/L	6010B
Sodium	79000		2000	ug/L	6010B
Sulfate	22		2.0	mg/L	300.0
Chloride	190		10	mg/L	300.0
Nitrate as N	1.0		0.050	mg/L	300.0
Ammonia	0.70		0.10	mg/L	L107-06-1B
Specific Conductance	720		1.0	umhos/cm	SM 2510B
Dissolved					
Sodium	91000		2000	ug/L	6010B
360-29919-5	OC-PZ 16 RR SW				
Aluminum	1100		100	ug/L	6010B
Chromium	220	B	5.0	ug/L	6010B
Sodium	140000		2000	ug/L	6010B
Sulfate	180		20	mg/L	300.0
Chloride	250		10	mg/L	300.0
Nitrate as N	5.1		0.050	mg/L	300.0
Ammonia	19		0.10	mg/L	L107-06-1B
Specific Conductance	1200		1.0	umhos/cm	SM 2510B
Dissolved					
Aluminum	69	J	100	ug/L	6010B
Chromium	13		5.0	ug/L	6010B
Sodium	140000		2000	ug/L	6010B
360-29919-6	OC-PZ 17 RR SW				
Aluminum	940		100	ug/L	6010B
Chromium	210	B	5.0	ug/L	6010B
Sodium	130000		2000	ug/L	6010B
Sulfate	200		20	mg/L	300.0
Chloride	230		10	mg/L	300.0
Nitrate as N	4.0	H	0.050	mg/L	300.0
Ammonia	25		0.50	mg/L	L107-06-1B
Specific Conductance	1200		1.0	umhos/cm	SM 2510B
Dissolved					
Aluminum	170		100	ug/L	6010B
Chromium	66		5.0	ug/L	6010B
Sodium	140000		2000	ug/L	6010B

METHOD SUMMARY

Client: Olin Corporation

Job Number: 360-29919-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Total Metals	TAL WFD	SW846 6010B	
Dissolved Metals	TAL WFD	SW846 6010B	
Preparation, Total Metals	TAL WFD		SW846 3010A
Sample Filtration, Field	TAL WFD		FIELD_FLTRD
Chloride & Sulfate	TAL WFD	40CFR136A 300.0	
Nitrate & Nitrite	TAL WFD	40CFR136A 300.0	
Nitrogen Ammonia	TAL WFD	LACHAT L107-06-1B	
Distillation, Ammonia	TAL WFD		Distill/Ammonia
Conductivity, Specific Conductance	TAL WFD	SM SM 2510B	
Nitrogen, Nitrite	TAL WFD	SM SM 4500 NO2 B	

Lab References:

TAL WFD = TestAmerica Westfield

Method References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

LACHAT = LACHAT

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: Olin Corporation

Job Number: 360-29919-1

Method	Analyst	Analyst ID
SW846 6010B	Smith, Tim J	TJS
40CFR136A 300.0	Emerich, Rich W	RWE
LACHAT L107-06-1B	Emerich, Rich W	RWE
SM SM 2510B	Emerich, Rich W	RWE
SM SM 2510B	Stewart, Alyse M	AMS
SM SM 4500 NO2 B	Emerich, Rich W	RWE

SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-29919-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-29919-1	OC-PZ 18 R SW	Water	09/01/2010 1205	09/01/2010 1700
360-29919-2	OC-ISCO 1	Water	09/01/2010 1220	09/01/2010 1700
360-29919-3	OC-ISCO 2	Water	09/01/2010 1300	09/01/2010 1700
360-29919-4	OC-ISCO 3	Water	09/01/2010 1325	09/01/2010 1700
360-29919-5	OC-PZ 16 RR SW	Water	09/01/2010 1400	09/01/2010 1700
360-29919-6	OC-PZ 17 RR SW	Water	09/01/2010 1025	09/01/2010 1700

SAMPLE RESULTS

Analytical Data

Client: Olin Corporation

Job Number: 360-29919-1

Client Sample ID: OC-PZ 18 R SW

Lab Sample ID: 360-29919-1
Client Matrix: WaterDate Sampled: 09/01/2010 1205
Date Received: 09/01/2010 1700**6010B Total Metals**

Method:	6010B	Analysis Batch:	360-62834	Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch:	360-62734	Lab File ID:	090310.csv
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	09/03/2010 1557			Final Weight/Volume:	50 mL
Date Prepared:	09/02/2010 0906				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	1000		15	100
Chromium	18	B	1.0	5.0
Sodium	55000		250	2000

6010B Dissolved Metals-Dissolved

Method:	6010B	Analysis Batch:	360-62881	Instrument ID:	Varian ICP
Preparation:	N/A			Lab File ID:	090710c.csv
Dilution:	1.0			Initial Weight/Volume:	
Date Analyzed:	09/07/2010 1714			Final Weight/Volume:	1.0 mL
Date Prepared:					

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	1100		15	100
Chromium	12		1.0	5.0
Sodium	61000		250	2000


10/3/10

Analytical Data

Client: Olin Corporation

Job Number: 360-29919-1

Client Sample ID: OC-ISCO 1

Lab Sample ID: 360-29919-2
Client Matrix: WaterDate Sampled: 09/01/2010 1220
Date Received: 09/01/2010 1700**6010B Total Metals**

Method:	6010B	Analysis Batch: 360-62834	Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch: 360-62734	Lab File ID:	090310.csv
Dilution:	1.0		Initial Weight/Volume:	50 mL
Date Analyzed:	09/03/2010 1617		Final Weight/Volume:	50 mL
Date Prepared:	09/02/2010 0906			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	950	3	15	100
Chromium	15	B	1.0	5.0
Sodium	47000	3	250	2000

6010B Dissolved Metals-Dissolved

Method:	6010B	Analysis Batch: 360-62881	Instrument ID:	Varian ICP
Preparation:	N/A		Lab File ID:	090710c.csv
Dilution:	1.0		Initial Weight/Volume:	
Date Analyzed:	09/07/2010 1717		Final Weight/Volume:	1.0 mL
Date Prepared:				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	1100	3	15	100
Chromium	10		1.0	5.0
Sodium	55000	3	250	2000


10/01/10

Analytical Data

Client: Olin Corporation

Job Number: 360-29919-1

Client Sample ID: OC-ISCO 2

Lab Sample ID: 360-29919-3

Date Sampled: 09/01/2010 1300

Client Matrix: Water

Date Received: 09/01/2010 1700

6010B Total Metals

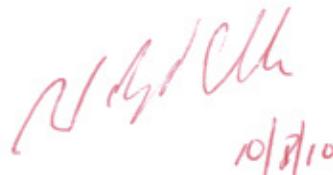
Method:	6010B	Analysis Batch: 360-62834	Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch: 360-62734	Lab File ID:	090310.csv
Dilution:	1.0		Initial Weight/Volume:	50 mL
Date Analyzed:	09/03/2010 1620		Final Weight/Volume:	50 mL
Date Prepared:	09/02/2010 0906			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	360		15	100
Chromium	65	B	1.0	5.0
Sodium	140000		250	2000

6010B Dissolved Metals-Dissolved

Method:	6010B	Analysis Batch: 360-62881	Instrument ID:	Varian ICP
Preparation:	N/A		Lab File ID:	090710c.csv
Dilution:	1.0		Initial Weight/Volume:	
Date Analyzed:	09/07/2010 1720		Final Weight/Volume:	1.0 mL
Date Prepared:				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	56	J	15	100
Chromium	13		1.0	5.0
Sodium	150000		250	2000


10/8/10

Analytical Data

Client: Olin Corporation

Job Number: 360-29919-1

Client Sample ID: OC-ISCO 3

Lab Sample ID: 360-29919-4
Client Matrix: WaterDate Sampled: 09/01/2010 1325
Date Received: 09/01/2010 1700**6010B Total Metals**

Method:	6010B	Analysis Batch: 360-62834	Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch: 360-62734	Lab File ID:	090310.csv
Dilution:	1.0		Initial Weight/Volume:	50 mL
Date Analyzed:	09/03/2010 1624		Final Weight/Volume:	50 mL
Date Prepared:	09/02/2010 0906			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	35	J	15	100
Chromium	1.8 <i>u</i>	J B	1.0	5.0
Sodium	79000 <i>s</i>		250	2000

6010B Dissolved Metals-Dissolved

Method:	6010B	Analysis Batch: 360-62896	Instrument ID:	Varian ICP
Preparation:	N/A		Lab File ID:	090810a.csv
Dilution:	1.0		Initial Weight/Volume:	
Date Analyzed:	09/08/2010 1212		Final Weight/Volume:	1.0 mL
Date Prepared:				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	ND		15	100
Chromium	ND		1.0	5.0
Sodium	91000 <i>s</i>		250	2000


10/8/10

Analytical Data

Client: Olin Corporation

Job Number: 360-29919-1

Client Sample ID: OC-PZ 16 RR SW

Lab Sample ID: 360-29919-5

Date Sampled: 09/01/2010 1400

Client Matrix: Water

Date Received: 09/01/2010 1700

6010B Total Metals

Method:	6010B	Analysis Batch: 360-62834	Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch: 360-62734	Lab File ID:	090310.csv
Dilution:	1.0		Initial Weight/Volume:	50 mL
Date Analyzed:	09/03/2010 1627		Final Weight/Volume:	50 mL
Date Prepared:	09/02/2010 0906			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	1100		15	100
Chromium	220	B	1.0	5.0
Sodium	140000		250	2000

6010B Dissolved Metals-Dissolved

Method:	6010B	Analysis Batch: 360-62896	Instrument ID:	Varian ICP
Preparation:	N/A		Lab File ID:	090810a.csv
Dilution:	1.0		Initial Weight/Volume:	
Date Analyzed:	09/08/2010 1215		Final Weight/Volume:	1.0 mL
Date Prepared:				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	69	J	15	100
Chromium	13		1.0	5.0
Sodium	140000		250	2000


N. Clark
09/01/10

Analytical Data

Client: Olin Corporation

Job Number: 360-29919-1

Client Sample ID: OC-PZ 17 RR SW

Lab Sample ID: 360-29919-6
Client Matrix: WaterDate Sampled: 09/01/2010 1025
Date Received: 09/01/2010 1700**6010B Total Metals**

Method:	6010B	Analysis Batch: 360-62834	Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch: 360-62734	Lab File ID:	090310.csv
Dilution:	1.0		Initial Weight/Volume:	50 mL
Date Analyzed:	09/03/2010 1630		Final Weight/Volume:	50 mL
Date Prepared:	09/02/2010 0906			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	940		15	100
Chromium	210	B	1.0	5.0
Sodium	130000		250	2000

6010B Dissolved Metals-Dissolved

Method:	6010B	Analysis Batch: 360-62896	Instrument ID:	Varian ICP
Preparation:	N/A		Lab File ID:	090810a.csv
Dilution:	1.0		Initial Weight/Volume:	
Date Analyzed:	09/08/2010 1223		Final Weight/Volume:	1.0 mL
Date Prepared:				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	170		15	100
Chromium	66		1.0	5.0
Sodium	140000		250	2000

WCH
10/7/10

Analytical Data

Client: Olin Corporation

Job Number: 360-29919-1

General Chemistry**Client Sample ID:** OC-PZ 18 R SW

Lab Sample ID: 360-29919-1

Date Sampled: 09/01/2010 1205

Client Matrix: Water

Date Received: 09/01/2010 1700

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Sulfate	200		mg/L	20	20	10	300.0
	Analysis Batch: 360-63039		Date Analyzed:	09/03/2010 1352			
Chloride	64		mg/L	10	10	10	300.0
	Analysis Batch: 360-63039		Date Analyzed:	09/03/2010 1352			
Nitrate as N	0.22		mg/L	0.050	0.050	1.0	300.0
	Analysis Batch: 360-63036		Date Analyzed:	09/03/2010 1151			
Ammonia	21		mg/L	1.0	1.0	10	L107-06-1B
	Analysis Batch: 360-62812		Date Analyzed:	09/03/2010 1503			
	Prep Batch: 360-62783		Date Prepared:	09/03/2010 1039			
Specific Conductance	660		umhos/cm	1.0	1.0	1.0	SM 2510B
	Analysis Batch: 360-62904		Date Analyzed:	09/08/2010 1530			
Nitrite as N	ND		mg/L	0.010	0.010	1.0	SM 4500 NO2
	Analysis Batch: 360-62846		Date Analyzed:	09/01/2010 1749			

Analytical Data

Client: Olin Corporation

Job Number: 360-29919-1

General Chemistry**Client Sample ID:** OC-ISCO 1

Lab Sample ID: 360-29919-2

Date Sampled: 09/01/2010 1220

Client Matrix: Water

Date Received: 09/01/2010 1700

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Sulfate	180		mg/L	20	20	10	300.0
	Analysis Batch: 360-63039		Date Analyzed:	09/03/2010 1437			
Chloride	60		mg/L	10	10	10	300.0
	Analysis Batch: 360-63039		Date Analyzed:	09/03/2010 1437			
Nitrate as N	0.29		mg/L	0.050	0.050	1.0	300.0
	Analysis Batch: 360-63036		Date Analyzed:	09/03/2010 1206			
Ammonia	19		mg/L	0.10	0.10	1.0	L107-06-1B
	Analysis Batch: 360-62812		Date Analyzed:	09/03/2010 1438			
	Prep Batch: 360-62783		Date Prepared:	09/03/2010 1039			
Specific Conductance	620		umhos/cm	1.0	1.0	1.0	SM 2510B
	Analysis Batch: 360-62904		Date Analyzed:	09/08/2010 1532			
Nitrite as N	ND		mg/L	0.010	0.010	1.0	SM 4500 NO2
	Analysis Batch: 360-62846		Date Analyzed:	09/01/2010 1749			

Analytical Data

Client: Olin Corporation

Job Number: 360-29919-1

General Chemistry**Client Sample ID:** OC-ISCO 2

Lab Sample ID: 360-29919-3

Date Sampled: 09/01/2010 1300

Client Matrix: Water

Date Received: 09/01/2010 1700

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Sulfate	480		mg/L	20	20	10	300.0
	Analysis Batch: 360-63039		Date Analyzed:	09/03/2010 1452			
Chloride	170		mg/L	10	10	10	300.0
	Analysis Batch: 360-63039		Date Analyzed:	09/03/2010 1452			
Nitrate as N	3.1		mg/L	0.050	0.050	1.0	300.0
	Analysis Batch: 360-63036		Date Analyzed:	09/03/2010 1221			
Ammonia	63		mg/L	1.0	1.0	10	L107-06-1B
	Analysis Batch: 360-63050		Date Analyzed:	09/09/2010 1406			
	Prep Batch: 360-62783		Date Prepared:	09/03/2010 1039			
Specific Conductance	1600		umhos/cm	2.0	2.0	2.0	SM 2510B
	Analysis Batch: 360-62942		Date Analyzed:	09/08/2010 1710			
Nitrite as N	ND		mg/L	0.010	0.010	1.0	SM 4500 NO2
	Analysis Batch: 360-62846		Date Analyzed:	09/01/2010 1749			

Analytical Data

Client: Olin Corporation

Job Number: 360-29919-1

General Chemistry**Client Sample ID:** OC-ISCO 3

Lab Sample ID: 360-29919-4

Date Sampled: 09/01/2010 1325

Client Matrix: Water

Date Received: 09/01/2010 1700

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Sulfate	22		mg/L	2.0	2.0	1.0	300.0
	Analysis Batch: 360-63039		Date Analyzed:	09/03/2010 1237			
Chloride	190		mg/L	10	10	10	300.0
	Analysis Batch: 360-63039		Date Analyzed:	09/03/2010 1508			
Nitrate as N	1.0		mg/L	0.050	0.050	1.0	300.0
	Analysis Batch: 360-63036		Date Analyzed:	09/03/2010 1252			
Ammonia	0.70		mg/L	0.10	0.10	1.0	L107-06-1B
	Analysis Batch: 360-62812		Date Analyzed:	09/03/2010 1442			
	Prep Batch: 360-62783		Date Prepared:	09/03/2010 1039			
Specific Conductance	720		umhos/cm	1.0	1.0	1.0	SM 2510B
	Analysis Batch: 360-62904		Date Analyzed:	09/08/2010 1534			
Nitrite as N	ND		mg/L	0.010	0.010	1.0	SM 4500 NO2
	Analysis Batch: 360-62846		Date Analyzed:	09/01/2010 1749			

Analytical Data

Client: Olin Corporation

Job Number: 360-29919-1

General Chemistry**Client Sample ID:** OC-PZ 16 RR SW

Lab Sample ID: 360-29919-5

Date Sampled: 09/01/2010 1400

Client Matrix: Water

Date Received: 09/01/2010 1700

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Sulfate	180		mg/L	20	20	10	300.0
	Analysis Batch: 360-63039		Date Analyzed:	09/03/2010 1523			
Chloride	250		mg/L	10	10	10	300.0
	Analysis Batch: 360-63039		Date Analyzed:	09/03/2010 1523			
Nitrate as N	5.1		mg/L	0.050	0.050	1.0	300.0
	Analysis Batch: 360-63036		Date Analyzed:	09/03/2010 1252			
Ammonia	19		mg/L	0.10	0.10	1.0	L107-06-1B
	Analysis Batch: 360-62812		Date Analyzed:	09/03/2010 1443			
	Prep Batch: 360-62783		Date Prepared:	09/03/2010 1039			
Specific Conductance	1200		umhos/cm	1.0	1.0	1.0	SM 2510B
	Analysis Batch: 360-62904		Date Analyzed:	09/08/2010 1536			
Nitrite as N	ND		mg/L	0.010	0.010	1.0	SM 4500 NO2
	Analysis Batch: 360-62846		Date Analyzed:	09/01/2010 1749			

Client: Olin Corporation

Job Number: 360-29919-1

General Chemistry

Client Sample ID:	OC-PZ 17 RR SW						
Lab Sample ID:	360-29919-6					Date Sampled: 09/01/2010 1025	
Client Matrix:	Water					Date Received: 09/01/2010 1700	
Analyte	Result	Qual	Units	RL	RL	Dil	Method
Sulfate	200		mg/L	20	20	10	300.0
	Analysis Batch: 360-63039		Date Analyzed: 09/03/2010 1538				
Chloride	230		mg/L	10	10	10	300.0
	Analysis Batch: 360-63039		Date Analyzed: 09/03/2010 1538				
Nitrate as N	4.0	-H J	mg/L	0.050	0.050	1.0	300.0
	Analysis Batch: 360-63036		Date Analyzed: 09/03/2010 1307				
Ammonia	25		mg/L	0.50	0.50	5.0	L107-06-1B
	Analysis Batch: 360-63050		Date Analyzed: 09/09/2010 1407				
	Prep Batch: 360-62783		Date Prepared: 09/03/2010 1039				
Specific Conductance	1200		umhos/cm	1.0	1.0	1.0	SM 2510B
	Analysis Batch: 360-62904		Date Analyzed: 09/08/2010-1537				
Nitrite as N	ND		mg/L	0.010	0.010	1.0	SM 4500 NO2
	Analysis Batch: 360-62846		Date Analyzed: 09/01/2010 1749				



 10/8/10

DATA REPORTING QUALIFIERS

Client: Olin Corporation

Job Number: 360-29919-1

Lab Section	Qualifier	Description
Metals	B	Compound was found in the blank and sample.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
General Chemistry	H	Sample was prepped or analyzed beyond the specified holding time

QUALITY CONTROL RESULTS

Quality Control Results

Client: Olin Corporation

Job Number: 360-29919-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 360-62734					
LCS 360-62734/2-A	Lab Control Sample	T	Water	3010A	
LCSD 360-62734/3-A	Lab Control Sample Duplicate	T	Water	3010A	
MB 360-62734/1-A	Method Blank	T	Water	3010A	
360-29919-1	OC-PZ 18 R SW	T	Water	3010A	
360-29919-1DU	Duplicate	T	Water	3010A	
360-29919-1MS	Matrix Spike	T	Water	3010A	
360-29919-1PDS	Post Digestion Spike	T	Water	3010A	
360-29919-1SD	Serial Dilution	T	Water	3010A	
360-29919-2	OC-ISCO 1	T	Water	3010A	
360-29919-3	OC-ISCO 2	T	Water	3010A	
360-29919-4	OC-ISCO 3	T	Water	3010A	
360-29919-5	OC-PZ 16 RR SW	T	Water	3010A	
360-29919-6	OC-PZ 17 RR SW	T	Water	3010A	
Analysis Batch:360-62834					
LCS 360-62734/2-A	Lab Control Sample	T	Water	6010B	360-62734
LCSD 360-62734/3-A	Lab Control Sample Duplicate	T	Water	6010B	360-62734
MB 360-62734/1-A	Method Blank	T	Water	6010B	360-62734
360-29919-1	OC-PZ 18 R SW	T	Water	6010B	360-62734
360-29919-1DU	Duplicate	T	Water	6010B	360-62734
360-29919-1MS	Matrix Spike	T	Water	6010B	360-62734
360-29919-1PDS	Post Digestion Spike	T	Water	6010B	360-62734
360-29919-1SD	Serial Dilution	T	Water	6010B	360-62734
360-29919-2	OC-ISCO 1	T	Water	6010B	360-62734
360-29919-3	OC-ISCO 2	T	Water	6010B	360-62734
360-29919-4	OC-ISCO 3	T	Water	6010B	360-62734
360-29919-5	OC-PZ 16 RR SW	T	Water	6010B	360-62734
360-29919-6	OC-PZ 17 RR SW	T	Water	6010B	360-62734
Analysis Batch:360-62881					
LCS 360-62881/1	Lab Control Sample	T	Water	6010B	
LCSD 360-62881/5	Lab Control Sample Duplicate	T	Water	6010B	
MB 360-62881/2	Method Blank	T	Water	6010B	
360-29919-1	OC-PZ 18 R SW	D	Water	6010B	
360-29919-2	OC-ISCO 1	D	Water	6010B	
360-29919-3	OC-ISCO 2	D	Water	6010B	
Analysis Batch:360-62896					
LCS 360-62896/13	Lab Control Sample	T	Water	6010B	
LCSD 360-62896/26	Lab Control Sample Duplicate	T	Water	6010B	
MB 360-62896/14	Method Blank	T	Water	6010B	
360-29919-4	OC-ISCO 3	D	Water	6010B	
360-29919-5	OC-PZ 16 RR SW	D	Water	6010B	
360-29919-6	OC-PZ 17 RR SW	D	Water	6010B	

Quality Control Results

Client: Olin Corporation

Job Number: 360-29919-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
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Report Basis

D = Dissolved

T = Total

Quality Control Results

Client: Olin Corporation

Job Number: 360-29919-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Prep Batch: 360-62783					
LCS 360-62783/2-A	Lab Control Sample	T	Water	Distill/Ammonia	
MB 360-62783/1-A	Method Blank	T	Water	Distill/Ammonia	
360-29919-1	OC-PZ 18 R SW	T	Water	Distill/Ammonia	
360-29919-2	OC-ISCO 1	T	Water	Distill/Ammonia	
360-29919-3	OC-ISCO 2	T	Water	Distill/Ammonia	
360-29919-4	OC-ISCO 3	T	Water	Distill/Ammonia	
360-29919-5	OC-PZ 16 RR SW	T	Water	Distill/Ammonia	
360-29919-6	OC-PZ 17 RR SW	T	Water	Distill/Ammonia	
Analysis Batch:360-62812					
LCS 360-62783/2-A	Lab Control Sample	T	Water	L107-06-1B	360-62783
MB 360-62783/1-A	Method Blank	T	Water	L107-06-1B	360-62783
360-29919-1	OC-PZ 18 R SW	T	Water	L107-06-1B	360-62783
360-29919-2	OC-ISCO 1	T	Water	L107-06-1B	360-62783
360-29919-4	OC-ISCO 3	T	Water	L107-06-1B	360-62783
360-29919-5	OC-PZ 16 RR SW	T	Water	L107-06-1B	360-62783
Analysis Batch:360-62846					
LCS 360-62846/4	Lab Control Sample	T	Water	SM 4500 NO2 B	
MB 360-62846/3	Method Blank	T	Water	SM 4500 NO2 B	
360-29919-1	OC-PZ 18 R SW	T	Water	SM 4500 NO2 B	
360-29919-2	OC-ISCO 1	T	Water	SM 4500 NO2 B	
360-29919-3	OC-ISCO 2	T	Water	SM 4500 NO2 B	
360-29919-4	OC-ISCO 3	T	Water	SM 4500 NO2 B	
360-29919-5	OC-PZ 16 RR SW	T	Water	SM 4500 NO2 B	
360-29919-6	OC-PZ 17 RR SW	T	Water	SM 4500 NO2 B	
Analysis Batch:360-62904					
LCS 360-62904/1	Lab Control Sample	T	Water	SM 2510B	
MB 360-62904/4	Method Blank	T	Water	SM 2510B	
360-29919-1	OC-PZ 18 R SW	T	Water	SM 2510B	
360-29919-2	OC-ISCO 1	T	Water	SM 2510B	
360-29919-4	OC-ISCO 3	T	Water	SM 2510B	
360-29919-5	OC-PZ 16 RR SW	T	Water	SM 2510B	
360-29919-6	OC-PZ 17 RR SW	T	Water	SM 2510B	
Analysis Batch:360-62942					
LCS 360-62942/3	Lab Control Sample	T	Water	SM 2510B	
MB 360-62942/2	Method Blank	T	Water	SM 2510B	
360-29919-3	OC-ISCO 2	T	Water	SM 2510B	
360-29919-3DU	Duplicate	T	Water	SM 2510B	

Quality Control Results

Client: Olin Corporation

Job Number: 360-29919-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:360-63036					
LCS 360-63036/4	Lab Control Sample	T	Water	300.0	
MB 360-63036/3	Method Blank	T	Water	300.0	
360-29919-1	OC-PZ 18 R SW	T	Water	300.0	
360-29919-2	OC-ISCO 1	T	Water	300.0	
360-29919-3	OC-ISCO 2	T	Water	300.0	
360-29919-4	OC-ISCO 3	T	Water	300.0	
360-29919-5	OC-PZ 16 RR SW	T	Water	300.0	
360-29919-6	OC-PZ 17 RR SW	T	Water	300.0	
Analysis Batch:360-63039					
LCS 360-63039/4	Lab Control Sample	T	Water	300.0	
MB 360-63039/3	Method Blank	T	Water	300.0	
360-29919-1	OC-PZ 18 R SW	T	Water	300.0	
360-29919-2	OC-ISCO 1	T	Water	300.0	
360-29919-3	OC-ISCO 2	T	Water	300.0	
360-29919-4	OC-ISCO 3	T	Water	300.0	
360-29919-5	OC-PZ 16 RR SW	T	Water	300.0	
360-29919-6	OC-PZ 17 RR SW	T	Water	300.0	
Analysis Batch:360-63050					
LCS 360-62783/2-A	Lab Control Sample	T	Water	L107-06-1B	360-62783
MB 360-62783/1-A	Method Blank	T	Water	L107-06-1B	360-62783
360-29919-3	OC-ISCO 2	T	Water	L107-06-1B	360-62783
360-29919-6	OC-PZ 17 RR SW	T	Water	L107-06-1B	360-62783

Report Basis

T = Total

Quality Control Results

Client: Olin Corporation

Job Number: 360-29919-1

Method Blank - Batch: 360-62734

Method: 6010B

Preparation: 3010A

Lab Sample ID: MB 360-62734/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/03/2010 1547
Date Prepared: 09/02/2010 0906

Analysis Batch: 360-62834
Prep Batch: 360-62734
Units: ug/L

Instrument ID: Varian ICP
Lab File ID: 090310.csv
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Aluminum	ND		15	100
Chromium	2.48	J	1.0	5.0
Sodium	ND		250	2000

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 360-62734

Method: 6010B
Preparation: 3010A

LCS Lab Sample ID: LCS 360-62734/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/03/2010 1551
Date Prepared: 09/02/2010 0906

Analysis Batch: 360-62834
Prep Batch: 360-62734
Units: ug/L

Instrument ID: Varian ICP
Lab File ID: 090310.csv
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 360-62734/3-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/03/2010 1554
Date Prepared: 09/02/2010 0906

Analysis Batch: 360-62834
Prep Batch: 360-62734
Units: ug/L

Instrument ID: Varian ICP
Lab File ID: 090310.csv
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	% Rec.		RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD				
Aluminum	103	106	80 - 120	3	20	
Chromium	104	107	80 - 120	3	20	
Sodium	100	103	80 - 120	3	20	

Quality Control Results

Client: Olin Corporation

Job Number: 360-29919-1

Matrix Spike - Batch: 360-62734

Method: 6010B

Preparation: 3010A

Lab Sample ID: 360-29919-1

Analysis Batch: 360-62834

Instrument ID: Varian ICP

Client Matrix: Water

Prep Batch: 360-62734

Lab File ID: 090310.csv

Dilution: 1.0

Units: ug/L

Initial Weight/Volume: 50 mL

Date Analyzed: 09/03/2010 1609

Final Weight/Volume: 50 mL

Date Prepared: 09/02/2010 0906

Analyte

Sample Result/Qual

Spike Amount

Result

% Rec.

Limit

Qual

Aluminum

1000

5000

6240

105 ✓

75 - 125

Chromium

18

1000

1050

104 ✓

75 - 125

Sodium

55000

20000

72600

90 ✓

75 - 125

Post Digestion Spike - Batch: 360-62734

Method: 6010B

Preparation: 3010A

Lab Sample ID: 360-29919-1

Analysis Batch: 360-62834

Instrument ID: Varian ICP

Client Matrix: Water

Prep Batch: 360-62734

Lab File ID: 090310.csv

Dilution: 1.0

Units: ug/L

Initial Weight/Volume: 50 mL

Date Analyzed: 09/03/2010 1615

Final Weight/Volume: 50 mL

Date Prepared: 09/02/2010 0906

Analyte

Sample Result/Qual

Spike Amount

Result

% Rec.

Limit

Qual

Aluminum

1000

5000

5930

98 ✓

75 - 125

Chromium

18

1000

990

97 ✓

75 - 125

Sodium

55000

20000

71500

84 ✓

75 - 125

Quality Control Results

Client: Olin Corporation

Job Number: 360-29919-1

Duplicate - Batch: 360-62734**Method: 6010B****Preparation: 3010A**

Lab Sample ID: 360-29919-1

Analysis Batch: 360-62834

Instrument ID: Varian ICP

Client Matrix: Water

Prep Batch: 360-62734

Lab File ID: 090310.csv

Dilution: 1.0

Units: ug/L

Initial Weight/Volume: 50 mL

Date Analyzed: 09/03/2010 1600

Final Weight/Volume: 50 mL

Date Prepared: 09/02/2010 0906

Analyte**Sample Result/Qual****Result****RPD****Limit****Qual**

Aluminum

1000

945

7 ✓

20

Chromium

18

15.5

15 ✓

20

Sodium

55000

49100

11 ✓

20

Serial Dilution - Batch: 360-62734**Method: 6010B****Preparation: 3010A**

Lab Sample ID: 360-29919-1

Analysis Batch: 360-62834

Instrument ID: Varian ICP

Client Matrix: Water

Prep Batch: 360-62734

Lab File ID: 090310.csv

Dilution: 5.0

Units: ug/L

Initial Weight/Volume: 50 mL

Date Analyzed: 09/03/2010 1612

Final Weight/Volume: 50 mL

Date Prepared: 09/02/2010 0906

Analyte**Sample Result/Qual****Result****%Diff****Limit****Qual**

Aluminum

1000

1070 ✓

5.9

10

Chromium

18

13.5 ✓

NC

10

J

Sodium

55000

56600 ✓

3.8

10

✓

Quality Control Results

Client: Olin Corporation

Job Number: 360-29919-1

Method Blank - Batch: 360-62881**Method: 6010B****Preparation: N/A**

Lab Sample ID: MB 360-62881/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/07/2010 1554
Date Prepared: N/A

Analysis Batch: 360-62881
Prep Batch: N/A
Units: ug/L

Instrument ID: Varian ICP
Lab File ID: 090710c.csv
Initial Weight/Volume:
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	MDL	RL
Aluminum	ND		15	100
Chromium	ND		1.0	5.0
Sodium	ND	✓	250	2000

Lab Control Sample/**Lab Control Sample Duplicate Recovery Report - Batch: 360-62881****Method: 6010B****Preparation: N/A**

LCS Lab Sample ID: LCS 360-62881/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/07/2010 1551
Date Prepared: N/A

Analysis Batch: 360-62881
Prep Batch: N/A
Units: ug/L

Instrument ID: Varian ICP
Lab File ID: 090710c.csv
Initial Weight/Volume:
Final Weight/Volume: 10 mL

LCSD Lab Sample ID: LCSD 360-62881/5
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/07/2010 1647
Date Prepared: N/A

Analysis Batch: 360-62881
Prep Batch: N/A
Units: ug/L

Instrument ID: Varian ICP
Lab File ID: 090710c.csv
Initial Weight/Volume:
Final Weight/Volume: 10 mL

Analyte	% Rec.		RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD				
Aluminum	108	99	80 - 120	9	20	
Chromium	106	101	80 - 120	5	20	
Sodium	106	102	80 - 120	3	20	

Quality Control Results

Client: Olin Corporation

Job Number: 360-29919-1

Method Blank - Batch: 360-62896**Method: 6010B****Preparation: N/A**

Lab Sample ID: MB 360-62896/14
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/08/2010 1052
Date Prepared: N/A

Analysis Batch: 360-62896
Prep Batch: N/A
Units: ug/L

Instrument ID: Varian ICP
Lab File ID: 090810a.csv
Initial Weight/Volume:
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	MDL	RL
Aluminum	ND		15	100
Chromium	ND		1.0	5.0
Sodium	ND		250	2000

Lab Control Sample/**Lab Control Sample Duplicate Recovery Report - Batch: 360-62896****Method: 6010B****Preparation: N/A**

LCS Lab Sample ID: LCS 360-62896/13
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/08/2010 1049
Date Prepared: N/A

Analysis Batch: 360-62896
Prep Batch: N/A
Units: ug/L

Instrument ID: Varian ICP
Lab File ID: 090810a.csv
Initial Weight/Volume:
Final Weight/Volume: 10 mL

LCSD Lab Sample ID: LCSD 360-62896/26
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/08/2010 1142
Date Prepared: N/A

Analysis Batch: 360-62896
Prep Batch: N/A
Units: ug/L

Instrument ID: Varian ICP
Lab File ID: 090810a.csv
Initial Weight/Volume:
Final Weight/Volume: 10 mL

Analyte	% Rec.				RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD	Limit	RPD				
Aluminum	100	96	80 - 120	4	20			
Chromium	99	96	80 - 120	4	20			
Sodium	99	95	80 - 120	4	20			

Quality Control Results

Client: Olin Corporation

Job Number: 360-29919-1

Method Blank - Batch: 360-63036

Method: 300.0

Preparation: N/A

Lab Sample ID: MB 360-63036/3

Analysis Batch: 360-63036

Instrument ID: No Equipment Assigned

Client Matrix: Water

Prep Batch: N/A

Lab File ID: N/A

Dilution: 1.0

Units: mg/L

Initial Weight/Volume: 1.0 mL

Date Analyzed: 09/03/2010 1106

Final Weight/Volume: 1.0 mL

Date Prepared: N/A

Analyte	Result	Qual	RL	RL
Nitrate as N	ND ✓		0.050	0.050

Lab Control Sample - Batch: 360-63036

Method: 300.0

Preparation: N/A

Lab Sample ID: LCS 360-63036/4

Analysis Batch: 360-63036

Instrument ID: No Equipment Assigned

Client Matrix: Water

Prep Batch: N/A

Lab File ID: N/A

Dilution: 1.0

Units: mg/L

Initial Weight/Volume: 1.0 mL

Date Analyzed: 09/03/2010 1121

Final Weight/Volume: 10 mL

Date Prepared: N/A

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	4.00	3.86	96 ✓	85 - 115	

Quality Control Results

Client: Olin Corporation

Job Number: 360-29919-1

Method Blank - Batch: 360-63039

Method: 300.0

Preparation: N/A

Lab Sample ID: MB 360-63039/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/03/2010 1106
Date Prepared: N/A

Analysis Batch: 360-63039
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	RL	RL
Sulfate	ND		2.0	2.0
Chloride	ND		1.0	1.0

Lab Control Sample - Batch: 360-63039

Method: 300.0

Preparation: N/A

Lab Sample ID: LCS 360-63039/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/03/2010 1121
Date Prepared: N/A

Analysis Batch: 360-63039
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	80.0	82.6	103 //	85 - 115	
Chloride	40.0	39.8	99 //	85 - 115	

Quality Control Results

Client: Olin Corporation

Job Number: 360-29919-1

Method Blank - Batch: 360-62783

Method: L107-06-1B

Preparation: Distill/Ammonia

Lab Sample ID: MB 360-62783/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/03/2010 1431
Date Prepared: 09/03/2010 1039

Analysis Batch: 360-62812
Prep Batch: 360-62783
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL	RL
Ammonia	ND ✓		0.10	0.10

Method Blank - Batch: 360-62783

Method: L107-06-1B

Preparation: Distill/Ammonia

Lab Sample ID: MB 360-62783/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/09/2010 1404
Date Prepared: 09/03/2010 1039

Analysis Batch: 360-63050
Prep Batch: 360-62783
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL	RL
Ammonia	ND ✓		0.10	0.10

Quality Control Results

Client: Olin Corporation

Job Number: 360-29919-1

Lab Control Sample - Batch: 360-62783**Method: L107-06-1B****Preparation: Distill/Ammonia**

Lab Sample ID: LCS 360-62783/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/03/2010 1432
Date Prepared: 09/03/2010 1039

Analysis Batch: 360-62812
Prep Batch: 360-62783
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ammonia	10.0	9.27	93	85 - 115	

Lab Control Sample - Batch: 360-62783**Method: L107-06-1B****Preparation: Distill/Ammonia**

Lab Sample ID: LCS 360-62783/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/09/2010 1405
Date Prepared: 09/03/2010 1039

Analysis Batch: 360-63050
Prep Batch: 360-62783
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ammonia	10.0	9.77	98	85 - 115	

Quality Control Results

Client: Olin Corporation

Job Number: 360-29919-1

Method Blank - Batch: 360-62904**Method: SM 2510B****Preparation: N/A**

Lab Sample ID: MB 360-62904/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/08/2010 1437
Date Prepared: N/A

Analysis Batch: 360-62904
Prep Batch: N/A
Units: umhos/cm

Instrument ID: Autotitrator
Lab File ID: 10090800.TXT
Initial Weight/Volume:
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	RL	RL
Specific Conductance	ND		1.0	1.0

Lab Control Sample - Batch: 360-62904**Method: SM 2510B****Preparation: N/A**

Lab Sample ID: LCS 360-62904/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/08/2010 1414
Date Prepared: N/A

Analysis Batch: 360-62904
Prep Batch: N/A
Units: umhos/cm

Instrument ID: Autotitrator
Lab File ID: 10090800.TXT
Initial Weight/Volume:
Final Weight/Volume: 1.0 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Specific Conductance	1410	1390	98	85 - 115	

Quality Control Results

Client: Olin Corporation

Job Number: 360-29919-1

Method Blank - Batch: 360-62942

Method: SM 2510B

Preparation: N/A

Lab Sample ID: MB 360-62942/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/08/2010 1701
Date Prepared: N/A

Analysis Batch: 360-62942
Prep Batch: N/A
Units: umhos/cm

Instrument ID: Autotitrator
Lab File ID: 10090801.TXT
Initial Weight/Volume:
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	RL	RL
Specific Conductance	ND		1.0	1.0

Lab Control Sample - Batch: 360-62942

Method: SM 2510B

Preparation: N/A

Lab Sample ID: LCS 360-62942/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/08/2010 1702
Date Prepared: N/A

Analysis Batch: 360-62942
Prep Batch: N/A
Units: umhos/cm

Instrument ID: Autotitrator
Lab File ID: 10090801.TXT
Initial Weight/Volume:
Final Weight/Volume: 1.0 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Specific Conductance	1410	1390	99	85 - 115	

Duplicate - Batch: 360-62942

Method: SM 2510B

Preparation: N/A

Lab Sample ID: 360-29919-3
Client Matrix: Water
Dilution: 2.0
Date Analyzed: 09/08/2010 1711
Date Prepared: N/A

Analysis Batch: 360-62942
Prep Batch: N/A
Units: umhos/cm

Instrument ID: Autotitrator
Lab File ID: 10090801.TXT
Initial Weight/Volume:
Final Weight/Volume: 1.0 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Specific Conductance	1600	1610	0	20	

Quality Control Results

Client: Olin Corporation

Job Number: 360-29919-1

Method Blank - Batch: 360-62846

Method: SM 4500 NO₂ B

Preparation: N/A

Lab Sample ID: MB 360-62846/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/01/2010 1749
Date Prepared: N/A

Analysis Batch: 360-62846
Prep Batch: N/A
Units: mg/L

Instrument ID: Jenway UV/VIS
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL	RL
Nitrite as N	ND		0.010	0.010

Lab Control Sample - Batch: 360-62846

Method: SM 4500 NO₂ B

Preparation: N/A

Lab Sample ID: LCS 360-62846/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/01/2010 1749
Date Prepared: N/A

Analysis Batch: 360-62846
Prep Batch: N/A
Units: mg/L

Instrument ID: Jenway UV/VIS
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrite as N	0.100	0.100	100	85 - 115	

State Accreditation Matrix

Method Name	Description	State where Primary Accreditation is Carried			
		New Hampshire (NELAC) prim.	Mass	Conn	Florida (NELAC)
821-R-02-012	Toxicity, Acute (48-Hour)(list upon request)	NP			NP
SM 4500 CI F	Chlorine, Residual		NP		
SM 9215E	Heterotrophic Plate Count (SimPlate)		P		
SM 9222D	Coliforms, Fecal (Membrane Filter)		P/NP		
SM 9223	Coliforms, Total, and E.Coli (Colilert-P/A)		P		
SM 9224	Coliforms, Total, and E.Coli (Enumeration)		P		
1103.1	E.coli		ambient/ source		
Enterolert	Enterococcus				
200.8 Rev 5.4	Metals (ICP/MS) (list upon request)	NP/P	NP/P	NP/P	
200.7 Rev 4.4	Metals (ICP)(list upon request)	NP/P	NP/P	NP/P	
6010B	Metals (ICP)(list upon request)	NP/SW		NP/SW	
245.1	Mercury (CVAA)	NP/P	NP	NP/P	
7470A	Mercury (CVAA)	NP		NP	
7471A	Mercury (CVAA)	SW		SW	
SM 2340B	Total Hardness (as CaCO ₃) by calculation	NP/P	NP	NP/P	
3005A	Preparation, Total Recoverable or Dissolved Metals	NP/P		NP/P	
3010A	Preparation, Total Metals	NP/P		NP/P	
3020A	Preparation, Total Metals	NP/P/SW		NP/P/SW	
3050B	Preparation, Metals	SW		SW	
504.1	EDB, DBCP and 1,2,3-TCP (GC)	P	P	P	
608	Organochlorine Pest/PCBs (list upon request)	NP	NP	NP	
625	Semivolatile Org Comp (GC/MS)(list upon request)	NP		NP	
3546	Microwave Extraction	SW			
3510C	Liquid-Liquid Extraction (Separatory Funnel)	NP		NP	
3540C	Soxhlet Extraction	SW			
3550B	Ultrasonic Extraction	SW		SW	
600/4-81-045	Polychlorinated Biphenyls (PCBs) (GC)		NP	NP	
8081A	Organochlorine Pesticides (GC)(list upon request)	NP/SW		NP/SW	
8082A	PCBs by Gas Chromatography(list upon request)	NP/SW		NP/SW	
8270C	Semivolatile Comp.(GC/MS)(list upon request)	NP/SW		NP/SW	
CT ETPH	Conn - Ext. Total petroleum Hydrocarbons (GC)			NP/SW	
MA-EPH	Mass - Extractable Petroleum Hydrocarbons (GC)			NP/SW	NP/SW
524.2	Volatile Org Comp (GC/MS)(list upon request)	P	P	P	
524.2	Trihalomethane compounds	P	P	P	
624	Volatile Org Comp (GC/MS)(list upon request)	NP	NP	NP	
5035	Closed System Purge and Trap	SW		SW	
5030B	Purge and Trap	NP		NP	
8260B	Volatile Org Comp. (GC/MS)(list upon request)	NP/SW		NP/SW	
MAVPH	Mass - Volatile Petroleum Hydrocarbons (GC)			NP/SW	NP/SW
180.1	Turbidity, Nephelometric	P	P	P	
300	Anions, Ion Chromatography	NP/P	NP/P	NP/P	
410.4	COD	NP	NP	NP	
1010	Ignitability, Pensky-Martens Closed-Cup Method	SW		SW	
10-107-06-2	Nitrogen, Total Kjeldahl	NP	NP	NP	
7196A	Chromium, Hexavalent	NP/SW		NP/SW	
9012A	Cyanide, Total and/or Amenable	NP/SW		NP/SW	
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	NP		NP	
9040B	pH	NP		NP	
9045C	pH	SW		SW	
L107041C	Nitrogen, Nitrate	NP	P	NP/P	
L107-06-1B	Nitrogen Ammonia	NP	NP	NP/P	
L204001A CN	Cyanide, Total	P	NP/P	NP/P	
L210-001A	Phenolics, Total Recoverable	NP	NP	NP	
SM 2320B	Alkalinity	NP/P	NP/P	NP/P	
SM 2510B	Conductivity, Specific Conductance	NP/P	NP/P	NP/P	
SM 2540C	Solids, Total Dissolved (TDS)	NP/P	NP/P	NP/P	
SM 2540D	Solids, Total Suspended (TSS)	NP	NP	NP	
SM 3500 CR D	Chromium, Hexavalent	NP		NP	
SM 4500 H+ B	pH	NP/P	NP/P	NP/P	
SM 4500 NO2 B	Nitrogen, Nitrite	NP	P	NP/P	
SM 4500 P E	Phosphorus, Orthophosphate	NP/P	NP	NP/P	
SM 4500 P E	Phosphorus, Total	NP	NP	NP	
SM 4500 S2 D	Sulfide, Total	NP		NP	
SM 5210B	BOD, 5-Day	NP	NP	NP	
SM 5310B	Organic Carbon, Total (TOC)	NP/P	NP	NP/P	

Not all organic compounds are accredited under NELAC

For methods with multiple compounds all compounds may not meet NELAC criteria, listing should be obtained from the laboratory

The lab carries additional accreditations with several states. This is the laboratories typical listing but is subject to change based on the laboratories current certification standing.

Login Sample Receipt Check List

Client: Olin Corporation

Job Number: 360-29919-1

Login Number: 29919

List Source: TestAmerica Westfield

Creator: Beaumier, Janine E

List Number: 1

Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.0C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

Chain of Custody Form

961700

● 53 Southampton Hoard
Westfield, MA 01085
(P) 413-572-4000
(F) 413-572-5707

● 240 Bear Hill Rd., Suite 104
Waltham, MA 02451
(P) 781-466-6900
(F) 781-466-6901

Chain of Custody Form

007195

● 53 Southampton Road
Westfield, MA 01085
(P) 413-572-4300
(F) 413-572-6707

● 240 Bear Hill Rd., Suite 104
Walpole, MA 02081
(P) 781-466-6900
(F) 781-466-6901

● 53 Southampton
Westfield, MA 01089
(P) 413-572-4000
(F) 413-572-3700

● 240 Bear Hill Rd., Suite 104
Waltham, MA 02451
(P) 781-466-6900
(E) 781-466-6901

Client: <u>DIA Corporation</u>		Client Project #: <u>20-29919</u> Quote#: <u>20-29919</u>	
Address: <u>51 Barnes St</u> <u>Burlington MA 01887</u>		Site ID & State: <u>State Street / Bremen Branch</u>	
Phone: <u>978-658-6131</u> Fax: <u>781-229-8828</u>		Reports Sent To: <u>Steve Mazzucco / Brian Burkhardt</u>	
Requested Turnaround Time (PLEASE SPECIFY)		Email: <u>b Burkhardt@DIA.com</u> Email Rpt: <input type="checkbox"/>	
STANDARD _____		Regulatory Programs/Presumptive Certainty/QC Forms	
RUSH <input type="checkbox"/> (Lab Approval Required)		MADEP MCP <input type="checkbox"/> GW/1S1 <input type="checkbox"/> PWS DEP Forms <input type="checkbox"/> CTDEP RCP <input type="checkbox"/> CT RSR <input type="checkbox"/> EDD Required.	
		Std Rpt (L1) <input type="checkbox"/> Rpt + QC(L2/MCP <input type="checkbox"/> CLP Rpt(L3 or L4) <input type="checkbox"/>	
Sample Type Codes: WW-Wastewater, DW-Drinking Water, SW-Surface Water, GW-Groundwater, LW-Lab Water, A-Air, S-Solids/Soil O-Oil, Z-Zero, Other		500-series for drinking water 6000-series for wastewater, NPDES 6000-series for groundwater, soil, waste 8000-series for groundwater, soil, waste Use comments section to further define.	
Sample I.D.		Comments: All samples Ammonia-nitrogen nitrate/nitrite chloride, sulfate specific conductivity Diss Al/Ca/Mg by 610B Total Al/Ca/Mg by 610B Ass results are field checked	
PZ 18RSW	Sample Type	Date	Preservative
SW	SW	9/1/10 12:05	(lab use only)
IS CO 1	SW	9/1/10 12:00	pH ✓ Grab Comp. # Containers
IS CO 2	SW	9/1/10 12:00	Plastic(P) or Glass(G) NaHSO4/MeOH HNO3 to pH <2 H2SO4 to pH <2 HCl to pH <2 NaOH to pH >12 Na2S2O3 None / 4° C
IS CO 3	SW	9/1/10 12:00	524 / 624 / 8260 525 / 625 / 8270 PCB / Pest / Herbicide EPH / VPH DRO / GRO / ETPH Metals (Please Specify)
PZ 16RSW	SW	9/1/10 2:00	Mercury General Chemistry Bacteriological Toxicity
Sampled by (print): <u>Brian Burkhardt</u> Date: <u>9/1/10</u> Time: <u>3:00</u>		Signature: <u>JB</u> Date: <u>9/1/10</u> Time: <u>4:00</u>	
Reinstituted by: <u>John Brown</u> Date: <u>9/1/10</u> Time: <u>4:00</u>		Received by: <u>John Brown</u> Date: <u>9/1/10</u> Time: <u>4:00</u>	
Relinquished by: <u>John Brown</u> Date: <u>9/1/10</u> Time: <u>4:00</u>		Received by: <u>John Brown</u> Date: <u>9/1/10</u> Time: <u>4:00</u>	
Comments:		Comments: All samples Ammonia-nitrogen nitrate/nitrite chloride, sulfate specific conductivity Diss Al/Ca/Mg by 610B Total Al/Ca/Mg by 610B Ass results are field checked	
Temp @ receipt: <u>3.0</u> °C		Cooler? <input checked="" type="checkbox"/> N Samples Iced? <input checked="" type="checkbox"/> Y	
Preservation / pH checked? <input checked="" type="checkbox"/> N		By: <u>JK</u> Date: <u>9/1/10</u>	

TestAmerica Westfield

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- of |

White = Lab file Pink = Customer copy